

REMARKS

Amendments

Claim 1 is amended to recite that the alignment layers are organic. See, e.g., page 5, lines 12-13. New claims 13-19 are directed to further aspects of applicants' invention. See, e.g., page 5, lines 12-33, page 21, line 31- page 23, line 6, and page 24, lines 1-3. Claims 19 and 20, like amended claim 1, recite the use of organic materials in an alignment layer.

Rejection Under 35 USC §112, second paragraph

Claim 3 is rejected as allegedly being indefinite with regards to layer thickness. This rejection is respectfully traversed.

Claim 2 recites that at least one orientation layer of the claimed display has a thickness of 4-60 nm. Claim 3 makes a comparison between the claimed display and another display which is otherwise identical but has layer thicknesses of 100 nm. Thus, the thickness of 100 nm does not refer to the claimed display.

It is respectfully submitted that claim 3 is sufficiently definite. Withdrawal of the rejection is respectfully requested.

Rejection Under 35 USC §103 in view of Baur et al.

Claims 1, 2, and 4-12 are rejected as being obvious in view of Baur et al. (US 5,188,758). This rejection is again respectfully traversed.

Baur et al. discloses an electro-optical display element which can be multiplexed, having a cell containing a nematic liquid crystal material with positive dielectric anisotropy and at least one chiral additive. The material is said to have a small surface tilt angle and a twist angle with a value between 150° and 250°. See column 2, lines 37-55.

In the rejection it is acknowledged that Baur et al. does not disclose an alignment layer with a thickness of 3-150 nm. In fact, Baur et al. discloses very little about alignment layers. At column 2, lines 17-27, Baur et al. discusses difficulties in achieving desired surface tilt angles and refers to sputtering with SiO₂ and rubbing of organic layers. At column 3, lines 9-16, reference is made to electrodes with surface treatment. Baur et al. does not provide any disclosure regarding the thickness of alignment layers or any suggestion of modifying their thicknesses.

The rejection cites Imanishi et al. as showing thickness of alignment layers. However, the thickness disclosed by Imanishi et al., i.e., 5 nm to 5 μ m, preferably 10-500 nm, refers porous alumina layers. See column 1, lines 61-66. At column 1, lines 18-22, Imanishi et al. refers to organic films, but no mention is made of any thickness.

In view of the above remarks, it is respectfully submitted that Baur et al., alone or in combination with Imanishi et al., does not provide any suggestion of modifying the disclosed display in such a way as to arrive at an embodiment in accordance with applicants' claimed invention. Withdrawal of the rejection under 35 USC §103 is respectfully requested.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

Please amend the claims as follows:

--1. An electro-optical liquid-crystal display comprising
a layer of liquid-crystal medium between two substrates with organic alignment layers on
inside surfaces of each of said substrates;
the liquid-crystal layer having a twist angle, from one substrate to the other, of 110°-360°;
the liquid-crystal layer having a surface tilt angle of 2°-20°; and
each of said organic alignment layers having a thickness of 3 nm-150 nm.--